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EXAMINER

ANDREWS, MELVYN J

ART UNIT

PAPER NUMBER

1742

DATE MAILED: 01/03/2003

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/852,866

Applicant(s)

HOFFMAN ET AL.

Examiner

Melvyn J. Andrews

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-- Th MAILING DATE of this communication app ars on the cover sheet with the correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2002 .
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7 .
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 112

Claims 14 to 20 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In Claim 14 the expression "where the compaction is of sufficient force to squeeze the water to 0% - 5% by weight of the green briquettes" is new matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 to 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Avotins et al (US 5,464,465). Avotins et al discloses a process for producing agglomerates comprising iron ore (col.14, line 55) and paper fibers and **coke breeze** (col.16, lines 7 to 11) although the expression cellulose fiber is not explicitly disclosed by Avotins et al it is obvious to one of ordinary skill at the time the invention was made that paper fibers are the equivalent of cellulose fibers as admitted by applicants in Claim 16. but does not explicitly disclose a water content of 0%-5% of a "mixture" or a "green

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briquette” but Avontins et al does disclose in Example 1 that the moisture content of the iron ore may be about 8.70% and the mixture including the iron ore may be 9.13% prior to formation of pellet which indicates that less than 5% moisture was added prior to pellet formation and Avontins et al recognizes that moisture is a result effective variable it would have been obvious to one of ordinary skill in the art at the time the invention was made determine the optimum or workable ranges of the water addition.

In re Boesch et al 205 USPQ 215

. With respect to Claim 18 Avotins et al discloses iron ore having an average particle size (col. 7, lines 25 to 48, Example 3) within the claimed range. With respect to Claim 19 the concentration of paper fibers is not explicitly disclosed by Avotins et al but it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the concentration of paper fiber in the Avontins et al since it is a result effective variable as evidenced by Avotins et al which claims fibers comprise primarily acrylic fibers, and the balance of the fibers are selected from paper fibers (col.16, lines 7 to 11), *In re Antoni*, 195 USPQ 6. With respect to Claims 8, 9 and 17 Avotins et al discloses that the product is suitable for L-D converters (col.4, lines 50 to 63) which produces steel.

Response to Arguments

Applicants' arguments filed December 9, 2002 have been fully considered but they are not persuasive. Applicants noted that “coke breeze’ was not disclosed by Avotins et al at col.6, lines 7-1, which should have been col.16, lines 7 to 11 is noted . The error is regretted and corrected above.

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Applicants' arguments that Avontins et al includes a polymer containing acrylonitrile has been noted but is not persuasive of error since the processes as in Claims 1 and 14 do not exclude a composition including a polymer containing acrylonitrile.

Applicants' arguments that the claimed invention calls for a total water content of 0% -5% of the weight of the briquette is not well taken because the process claims do not limit the water content of a green briquette but the claimed water content refers to the mixture prior to being formed into a green briquette. In Claim 14 the water content appears to refer to the green briquettes.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., **crush strength**) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claims 1 to 7, 10 to 16, 18, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crowe (US 2,865,731) in view of Avotins et al (US 5,464,465).

Crowe discloses a process of briquetting iron oxide with cellulose fibers (col.4, lines 6 to 9) but does not include a reductant but Avontins et al discloses the inclusion of additives such as paper fibers and coke breeze (col.13, line 57 to to col.14, line 3) form an iron ore agglomerate it would have been obvious to one of ordinary skill in the art at the time the invention was made to likewise add normally used additives such as coke breeze to the Crowe briquette which is intended as a feed to reduce iron oxides.

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Also Crowe discloses a process for briquetting iron ore with cellulose fibers (col.4, lines 6 to 9) which may be tested for heat resistance by heating up to 2000° F in such a way that plenty of time was allowed for the paper to burn out (col.3, lines 53 to 58) but does not specify the time and temperature claimed in Claim 1 but it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize these result effective variables , *In re Antoni*, 195 USPQ 6

. With respect to Claims 8, 9 and 17 Crowe discloses a product suitable for feeding to blast furnaces (col.1, lines 15 to 19) but does not disclose that the product is supplied to a steelmaking process but Avontins et al disclose that a product produced from iron bearing material and paper fibers is suitable to be used in blast furnaces as well as L-D converters (col.4, lines 50 to 63) which produces steel. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the Crowe product which is also produced from an iron material and paper fiber to produce steel in an L-D converter since the Avotins et al product and Crowe product are obviously equivalent sources of iron.

Response to Arguments

Applicants' arguments filed December 9, 2002 have been fully considered but they are not persuasive. Applicants arguments are not persuasive of error since the 14.8% refers to the moisture of the ore not to a mixture or to the green briquettes.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the pressures in the range of 8,000 to 12,000 psi or higher as well as crush

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strength) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.

See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Response to Affidavit

The affidavit under 37 CFR 1.132 filed December 09, 2002 is insufficient to overcome the rejection of claims 1 to 20 based upon Crowe (US 2,865,731) and Avotins et al (US 5,464,465) as set forth in the last Office action because:

Applicant states that sufficient crush strength must be possessed by the briquette but no "crush strength" is claimed.

Applicant argues that 17,000 psi pressure when briquetting but this is not claimed.

Applicant argues that the green briquette contains less than 5% (target 1%) water but this feature as in Claim 14 is new matter.

Applicant states that Crowe calls "for a moisture content of around 14.8 % (col.2, line 46)" if referring to the moisture content of a "mixture" or a "green briquette", is incorrect because Crowe states on col.2, lines 44 and 45 "The ore , as used , was slightly damp, containing , 14.8 % moisture (total weight basis)" so that Crowe refers to the moisture content of the iron ore.

With respect to Avotins et al (US 5,464,465) the presence of acrylonitrile fibers is not excluded by the claimed processes. Also Avotins et al explicitly disclose " coke breeze " (col.13 line 67 to col.14, line 1) and (col.16, line10).

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Claims 1 to 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wienert (US 5,421,859) in view of Grandin et al (US 5,833,735). Wienert discloses a process for making hard composites from coal and iron ores comprising mixing particles with such an amount of water that a later compression squeezes out a small amount of the added water, aggregating the mixture and compressing the aggregates under a pressure in the range of 800 to 1600 kg per square cm. whereby a small amount of added water is squeezed out and a ribbon is formed which is divided into single compacted bodies (col.16, lines 11 to 46) and discloses the addition of limestone to the mixture (Fig. 1) but does not disclose the inclusion of ground paper (which is cellulose fiber) and does not disclose the specific amount of water squeezed from the mixture but Grandin et al discloses cold briquetting iron oxides and carbon carriers together with a binder which may be lime or ground paper (col.4, lines 49 to 59). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a binder such as ground in the Wienert mixture since ground paper is equivalent to limestone as a binder as taught by Grandin et al. Since Wienert et al recognizes that moisture is a result effective variable it would have been obvious to one of ordinary skill in the art at the time the invention was made determine the optimum or workable ranges of the water addition. In re Boesch et al 205 USPQ 215

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Claims 1 to 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Canadian patent No.1002761 in view of Avotins et al (US 5,464,465). The Canadian patent discloses a method for producing pellets from a slurry solid particles of iron ores blended with wood fibres (page 15 and 16) but does not disclose coal or the amount of moisture removed but Avotins et al discloses a process for producing agglomerates comprising iron ore, paper fibers and coke breeze (col.16, lines 7 to 11). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include coal in the Canadian pellets since iron oxides are being reduced in both cases. With respect to the amount of moisture removed the Canadian patent discloses the step of separating water from the mixture thereby forming a moist mixture it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the amount of water remaining in the moist mixture since moisture is recognized by the Canadian patent as a result effective variable. In re Boesch et al 205 USPQ 215.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvyn J. Andrews whose telephone number is 703-308-3739. The examiner can normally be reached on 8:00A.M. to 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V King can be reached on 703-308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.


MELVYN ANDREWS
PRIMARY EXAMINER

mja
December 26, 2002